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A method of converting an abstract quality of service policy into a new configuration for one or more network devices of a managed network, such as routers. The policy expresses a quality of service treatment of traffic flows that are carried by the network, at a high level of abstraction, and is created and stored using a quality of service policy management system. According to an embodiment of the method, the abstract quality of service policy is received and converted into a first set of one or more basic commands. A current configuration of one of the network devices is obtained, e.g., through device discovery. The configuration is received in the form of one or more first command line interface (CLI) commands that represent the current configuration of the network device. A second set of one or more basic commands that correspond to the current configuration of the network device is determined, based on the first CLI commands. The first and second sets of basic commands are transformed into one or more second CLI commands which, when executed by the network device, will create a new configuration for the network device that implements the abstract quality of service policy. Merging and aggregation, based on state values associated with the basic commands, is carried out to remove any duplicate commands. As a result, CLI commands providing a new configuration that implements the policy are deployed to the device. The basic commands are expressed at a level of abstraction lower than the abstract policy and higher than the

20 CLI commands.